



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/645,888	08/20/2003	James Barry Colter	66638/40473	8186
21888	7590	04/29/2005	EXAMINER HO, HA DINH	
THOMPSON COBURN, LLP ONE US BANK PLAZA SUITE 3500 ST LOUIS, MO 63101			ART UNIT 3681	PAPER NUMBER

DATE MAILED: 04/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/645,888	COLTER ET AL.	
	Examiner	Art Unit	
	Ha D. Ho	3681	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 11 March 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-18 is/are pending in the application.
 - 4a) Of the above claim(s) 11-18 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-10 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/11/05</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

1. This Office Action is responsive to Applicant's Amendment filed 03/11/05. Claims 1-18 are currently pending.
2. Claims 11-18 were withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 10/12/04.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stoeckicht (US 3,011,365) in view of patent GB 949 850 (cited in form 1449 submitted 03/11/05).

Stoeckicht teaches a planetary gear system (see Fig. 1) comprising:

a sun gear 7 adapted for rotation about a sun gear axis, the sun gear having a first sun gear part and a second sun gear part (right and left portions), the first sun gear part having first sun helical teeth, the second sun gear part having second sun helical teeth, the first and second sun gear parts being coaxial and made in one piece such that the sun first and second helical teeth are axially adjacent,

a plurality of planet gears 6 adapted for rotation about a corresponding plurality of planet gear axes, each planet gear comprising a first planet gear part and a second planet gear part (right and left portions), the first planet gear part of each planet gear having planet first helical teeth and the second planet gear part of each planet gear having planet second helical teeth, the first and second planet gear parts of each planet gear being coaxial and made in one piece such that the planet first and second helical teeth are axially adjacent,

the planet first helical teeth of each of the plurality of planet gears meshing with the sun first helical teeth, and the planet second helical teeth of each of the plurality of planet gears meshing with the sun second helical teeth,

an apex gap between the first and second parts of the sun gear, and an apex gap between the first and second pad of each of the planet gears (there is a gap between the right and left portions),

wherein the sun and planet helical teeth are arranged such that with the sun and planet gears rotating about their respective axes, axial forces imparted by the sun first helical teeth against the planet first helical teeth are in an axial direction opposite the axial forces imparted by the sun second helical teeth against the planet second helical teeth (this is so because of the herringbone gears),

wherein the sun first and second helical teeth are indexed, and the planet first and second helical teeth of each planet gear are indexed.

Stoeckicht shows the first and second sun gear parts being made in one piece, not jointed by a weld, and the first and second planet gear parts of each planet gear being made in one piece, not jointed by a weld.

Patent GB 949 850 shows a gear having first (5) and second (6) gear parts, wherein the first and second gear parts are coaxial and jointed by a weld (see Figs. 1 and 2)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the sun gear and the planet gear of Stoeckicht such that the first and second gear parts are jointed by a weld in view of Patent GB 949 850 in order to reduce cost of gear fabrication (page 1, lines 26-29 and lines 53-58).

5. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over McKibbin (US 5,472,383) in view of patent GB 949 850 (cited in form 1449 submitted 03/11/05).

McKibbin teaches a planetary gear system (see Fig. 2) comprising:

a sun gear 8 adapted for rotation about a sun gear axis, the sun gear having a first sun gear part 8a and a second sun gear part 8b, the first sun gear part having first sun helical teeth, the second sun gear part having second sun helical teeth, the first and second sun gear parts being coaxial and made in one piece such that the sun first and second helical teeth are axially adjacent, a plurality of planet gears 10 adapted for rotation about a corresponding plurality of planet gear axes, each planet gear comprising a first planet gear part and a second planet gear part (right and left portions), the first planet gear part of each planet gear having planet first helical teeth and the second planet gear part of each planet gear having planet second helical teeth, the first and second planet gear parts of each planet gear being coaxial and made in one piece such that the planet first and second helical teeth are axially adjacent,

the planet first helical teeth of each of the plurality of planet gears meshing with the sun first helical teeth, and the planet second helical teeth of each of the plurality of planet gears meshing with the sun second helical teeth,

an apex gap 86 between the first and second parts of the sun gear, and an apex gap 88 between the first and second pad of each of the planet gears,

wherein the sun and planet helical teeth are arranged such that with the sun and planet gears rotating about their respective axes, axial forces imparted by the sun first helical teeth against the planet first helical teeth are in an axial direction opposite the axial forces imparted by the sun second helical teeth against the planet second helical teeth (this is so because of the herringbone gears),

wherein the sun first and second helical teeth are indexed, and the planet first and second helical teeth of each planet gear are indexed.

McKibbin shows the first and second sun gear parts being made in one piece, not jointed by a weld, and the first and second planet gear parts of each planet gear being made in one piece, not jointed by a weld.

Patent GB 949 850 shows a gear having first (5) and second (6) gear parts, wherein the first and second gear parts are coaxial and jointed by a weld (see Figs. 1 and 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the sun gear and the planet gear of McKibbin such that the first and second gear parts are jointed by a weld in view of Patent GB 949 850 in order to reduce cost of gear fabrication (page 1, lines 26-29 and lines 53-58).

Response to Arguments

6. Applicant's arguments with respect to claims 1 and 6 have been considered but are moot in view of the new ground(s) of rejection (see paragraphs 4 and 5 above).

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Communication

8. Submission of your response by facsimile transmission is encouraged. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9326 for regular communications and (703) 872-9327 for After Final communications. Recognizing the fact that reducing cycle time in the processing and examination of patent applications will effectively increase a patent's term, it is to your benefit to submit responses by facsimile transmission whenever permissible. Such submission will place the response directly in our examining group's hands and will eliminate Post Office processing and delivery time as well as the PTO's mail room processing and delivery time. For a complete list of

Art Unit: 3681

correspondence not permitted by facsimile transmission, see M.P.E.P. 502.01. In general, most responses and/or amendments not requiring a fee, as well as those requiring a fee but charging such fee to a deposit account, can be submitted by facsimile transmission. Responses requiring a fee which applicant is paying by check should not be submitting by facsimile transmission separately from the check. Responses submitted by facsimile transmission should include a Certificate of Transmission (M.P.E.P.. 512). The following is an example of the format the certification might take:

I hereby certify that this correspondence is being facsimile transmitted to
the Patent and Trademark Office on _____
(Date)

Typed or printed name of person signing this certificate:

(Signature)

If your response is submitted by facsimile transmission, you are hereby reminded that the original should be retained as evidence of authenticity (37 CFR 1.4 and M.P.E.P.. 502.02). Please do not separately mail the original or another copy unless required by the Patent and Trademark Office. Submission of the original response or a follow-up copy of the response after your response has been transmitted by facsimile will only cause further unnecessary delays in the processing of your application; duplicate responses where fees are charged to a deposit account may result in those fees being charged twice.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ha D. Ho whose telephone number is 571-272-7091. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Marmor can be reached on 571-272-7095.

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HDH
(703) 305-0738
April 28, 2005

Ha D. Ho
HAHO
PRIMARY EXAMINER
Art Unit 3681 4/28/05